

IN THE CLAIMS

Claim 1 (Canceled)

Claim 2 (Currently Amended) A solid, pulverulent, water-dispersible, blocked polyisocyanate adduct having particle diameters of from about 1 to 1000 µm, comprising:
~~5 to 95% by weight, based on the total weight of the adduct, of at least one isocyanate component having at least one NCO group, said isocyanate component selected from the group consisting of aliphatic, cycloaliphatic and aromatic isocyanates, wherein said isocyanate has a Tg greater than 50 °C and an average NCO functionality of 2-4;~~
~~5 to 70% by weight, based on the total weight of the adduct, of at least one hydrophilicizing component containing at least one group which is reactive toward the at least one NCO group;~~
~~at least one blocking agent for blocking from 95 to 100% of the NCO groups which do not react with the hydrophilicizing component; and~~
~~up to 15% by weight, based on the total weight of the adduct, of at least one neutralizing agent obtainable by reacting, in a water-free, organic auxiliary solvent, at least one isocyanate component selected from the group consisting of aliphatic, cycloaliphatic and aromatic isocyanates, wherein said isocyanate has an average NCO functionality of 2-4~~
with
at least one hydrophilicizing component containing at least one group which is reactive toward the NCO groups, in an amount such that there is on average not more than one NCO-reactive function for each isocyanate molecule;
blocking with at least one blocking agent from 95 to 100% of the NCO groups not reacting with the hydrophilicizing component;

optionally neutralizing with at least one neutralizing agent; and
removing the organic auxiliary solvent.

Claim 3 (Previously Presented) The blocked polyisocyanate adduct of claim 2, wherein the isocyanate component is at least one diisocyanate selected from the group consisting of 1,6-diisocyanatohexane (HDI), bis(4-isocyanatocyclohexyl)methane (HMDI), 1,5-diisocyanato-2-methylpentane (MPDI), 1,6-diisocyanato-2,4,4-trimethylhexane (TMDI) and 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate (IPDI).

Claim 4 (Original) The blocked polyisocyanate adduct of claim 3, wherein the diisocyanates have at least two isocyanate groups per molecule.

Claim 5 (Original) The blocked polyisocyanate adduct of claim 3, wherein the diisocyanate compound is prepared by trimerizing, allophanatizing, biuretizing or urethanizing the diisocyanates.

Claim 6 (Previously Presented) The blocked polyisocyanate adduct of claim 2, wherein the isocyanate is a product of at least one diisocyanate selected from the group consisting of 1,6-diisocyanatohexane (HDI), bis(4-isocyanatocyclohexyl)methane (HMDI), 1,5-diisocyanato-2-methylpentane (MPDI), 1,6-diisocyanato-2,4,4-trimethylhexane (TMDI) and 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate (IPDI) and at least one compound selected from the group consisting of polyol and polyamine.

Claim 7 (Original) The polyisocyanate adduct of claim 2, wherein the isocyanate is at least one isocyanate selected from the group consisting of IPDI and IPDI isocyanurate.

Claim 8 (Original) The polyisocyanate adduct of claim 2, wherein the isocyanate is at least one isocyanate selected from the group consisting of tetramethylenexylylene diisocyanate (TMXDI), 2,4-diisocyanatoluene and its technical mixtures with 2,6-diisocyanatoluene and 4,4'-diisocyanatodiphenylmethane and its technical mixtures with 2,4'-diisocyanatodiphenylmethane.

Claim 9 (Currently Amended) The polyisocyanate adduct of claim 2, wherein the hydrophilicizing component is an ionic component selected from the group consisting of monohydroxyalkylcarboxylic acids, polyhydroxyalkylcarboxylic acids, monohydroxyalkyl sulfonic acids, [-]polyhydroxyalkylsulfonic acids, monohydroxyalkyl phosphonic acids, [-]polyhydroxyalkylphosphonic acids, monofunctional aminocarboxylic acids, and polyfunctional aminocarboxylic acids.

Claim 10 (Previously Presented) The blocked polyisocyanate adduct of claim 2, wherein the hydrophilicizing component is a nonionic hydrophilicizing agent having at least one terminal hydroxyl group.

Claim 11 (Previously Presented) The blocked polyisocyanate adduct of claim 10, wherein the nonionic hydrophilicizing agent is selected from the group consisting of polyether containing 80-100% by weight of ethylene oxide units, based on the weight of the polyether, and polyether containing 80-100% by weight of propylene oxide units, based on the weight of the polyether.

Claim 12 (Canceled)

Claim 13 (Original) The blocked polyisocyanate adduct of claim 2, wherein the blocking agent is at least one agent selected from the group consisting of monofunctional alcohols, polyfunctional alcohols, phenols, oximes, CH-acidic compounds, NH-acidic compounds, glycol monoethers and amino alcohols.

Claim 14 (Original) The blocked polyisocyanate adduct of claim 13, wherein the blocking agent is at least one agent selected from the group consisting of caprolactam, diethylethanolamine, diisopropylamine, dialkyl malonates, acetone oxime, acetophenone oxime, methyl ethyl ketone oxime, triazole and dimethylpyrazole.

Claim 15 (Previously Presented) The blocked polyisocyanate adduct of claim 2, wherein said neutralizing agent is present in an amount greater than 0% by weight, based on the weight of the adduct.

Claim 16 (Original) The blocked polyisocyanate adduct of claim 15, wherein the neutralizing agent is capable of forming salts.

Claim 17 (Original) The blocked polyisocyanate adduct of claim 16, wherein the neutralizing agent is an agent selected from the group consisting of organic acids, inorganic acids, organic bases, and inorganic bases.

Claim 18 (Original) The blocked polyisocyanate adduct of claim 17, wherein the base used as a neutralizing agent is selected from the group consisting of ammonia, amines and amino alcohols.

Claim 19 (Original) The blocked polyisocyanate adduct of claim 17, wherein the acid used as a neutralizing agent is selected from the group consisting of formic, acetic, lactic and benzoic acid.

Claim 20 (Original) The blocked polyisocyanate adduct of claim 17, wherein the degree of neutralization of the neutralizing agent is 0.5 -1.0.

Claim 21 (Original) The blocked polyisocyanate adduct of claim 2, wherein said adduct further comprises admixed hydrophobic blocked isocyanates.

Claim 22 (Currently Amended) An aqueous dispersion comprising the The blocked polyisocyanate adduct of claim 2, ~~wherein said adduct is used in aqueous dispersions as a crosslinker resin.~~

Claim 23 (Currently Amended) A polyurethane dispersion comprising the The blocked polyisocyanate adduct of claim 2, ~~wherein said adduct is used in polyurethane dispersions.~~

Claim 24 (Currently Amended) An acrylic dispersion comprising the The blocked polyisocyanate adduct of claim 2, ~~wherein said adduct is used in acrylic dispersions.~~

Claim 25 (Currently Amended) A process for the water-free preparation of a solid, pulverulent, water-dispersible, blocked polyisocyanate adduct having particle diameters of from about 1 to 1000 µm, comprising:

reacting, in an organic auxiliary solvent, ~~5 to 95% by weight, based on the weight of the adduct, of~~ at least one isocyanate component selected from the group consisting of aliphatic, cycloaliphatic and aromatic isocyanates, wherein said isocyanate has a ~~T_g greater than 50 °C~~ and an average NCO functionality of 2-4

with ~~5 to 70% by weight, based on the weight of the adduct, of~~ at least one hydrophilicizing component containing at least one group which is reactive toward the NCO groups, in an amount such that there is on average not more than one NCO-reactive function for each isocyanate molecule;

blocking ~~any remaining unreacted NCO groups~~ with at least one blocking agent for blocking from 95 to 100% of the NCO groups not reacting with the hydrophilicizing component;

optionally neutralizing with up to 15% by weight, based on the weight of the adduct, ~~of~~ at least one neutralizing agent; and

removing the organic auxiliary solvent.

Claim 26 (Canceled)

Claim 27 (New) The blocked polyisocyanate adduct of claim 2, wherein the particle diameters are from 1 to 300 µm.

Claim 28 (New) The process of claim 25, wherein the particle diameters are from 1 to 300 μm .

DISCUSSION OF THE AMENDMENT

Claim 2 has been amended into product-by-process form; by deleting superfluous language; by deleting percentage ranges for the isocyanate and hydrophilicizing components; by deleting the Tg limitation for the isocyanate; by inserting a particle diameter limitation, as supported in the specification at paragraph [0045]; and by inserting functional amounts for the hydrophilicizing component, as supported in the specification at paragraph [0037]. The term “obtainable” is supported in the specification, which describes various alternative ways of making the presently-claimed blocked polyisocyanate adduct. See paragraphs [0034] to [0044]. Claim 25 has been similarly amended, regarding deleting percentage ranges, adding functional amounts, deleting the Tg limitation for the isocyanate, inserting a particle diameter limitation, and by deleting superfluous language.

Claim 9 has been amended by replacing the dashes with the corresponding -- polyhydroxyalkyl-- prefixes, and by also inserting monohydroxyalkylsulfonic acids and monohydroxyalkyl phosphonic acids into the recited Markush group, as supported by Claim 7 of the priority application, which, at paragraph [0074] has been incorporated by reference. Claims 22-24 have each been amended to claim the recited dispersion in place of “is used in” terminology.

New Claims 27 and 28 have been added, as supported in the specification at paragraph [0045].

No new matter is believed to be added by the amendments. Claims 2-11, 13-25 and 27-28 are now pending in the application.